Multifunctional GPS Vehicle Tracker

User Manual

preface

Thank you for purchasing the TK109 GSM/CDMA+GPS multifunctional vehicle tracker. This manual will show you all of the functions and how to operate the devices smoothly and correctly. Make sure to read this manual carefully before using this product. Please note that specification and information are

subjected to changes without prior notice in this manual. Any change will be integrated in the latest release. The manufacturer won't assumes any responsibility of law for any errors or omissions in this document.

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1. products summary

This products based on existing GSM/GPRS/CDMA+GPS satellite,the product could locate and monitor any remote targets by SMS or GPRS. It has the functions as following : SOS alarm,stop engine remotely,ACC detecting,static milleages,power cut function. The owners should be informed throught SMS text message or monitor system platform software .

Optional function : able compatible with original car alarm system, detecting the oil mass of vehicles,managing vehicles' scheduling,two ways communication,camera,LED advertisement screen,shake alarm,detecting positive and negative turning of concrete,monitoring remotely ,Bus-stop and text broadcast,Taxi meter etc.

2. Applications Area

- Vehicle rental / Fleet management etc
- GPS tracking,query the position of vehicles,real time tracking,timing tracking.
- Control and stop engine remotely.
- All kinds of vehicles commanding and dispatching system.

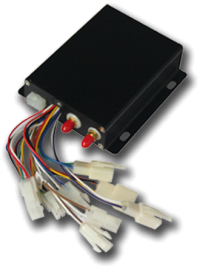
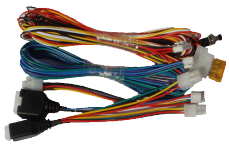
3. Technical parameter

Content	Specs.
Dim.	115mm x 105mm x28mm
Weight	300g
Network	GSM/GPRS/GPS
GSM Band	EGSM900/GSM1800 or CDMA 800MHz
GPS chip	SIRF3 chip

GPS sensitivity	-159dBm
GPS accuracy	10m
Positioning time	cold start：32s warm start：32s hot start：1s
Work voltage	9V—36V
battery	3.7V 750mAh
standby	4hours
Storage Temp.	-40°C to +85°C
Operation Temp.	-20°C to +70°C
Relative humidity	5%--95%
Working voltage	120MA DC12V
support	AGPS
GPS gallery	24 gallery
Scheduling screen voltage	5V
Host Power	Average power consumption<1W Power-saving state<300mW
Battery protection	Anti-200V power supply reverse polarity; 9V battery low voltage protection; battery voltage 36V high-voltage protection
bus interface	Four ways RS232,DC+5V controlled output,maximum 500mA output current One way RS485，DC+5V controlled output,maximum 500mA output current

4. Products accessories and installation instructions

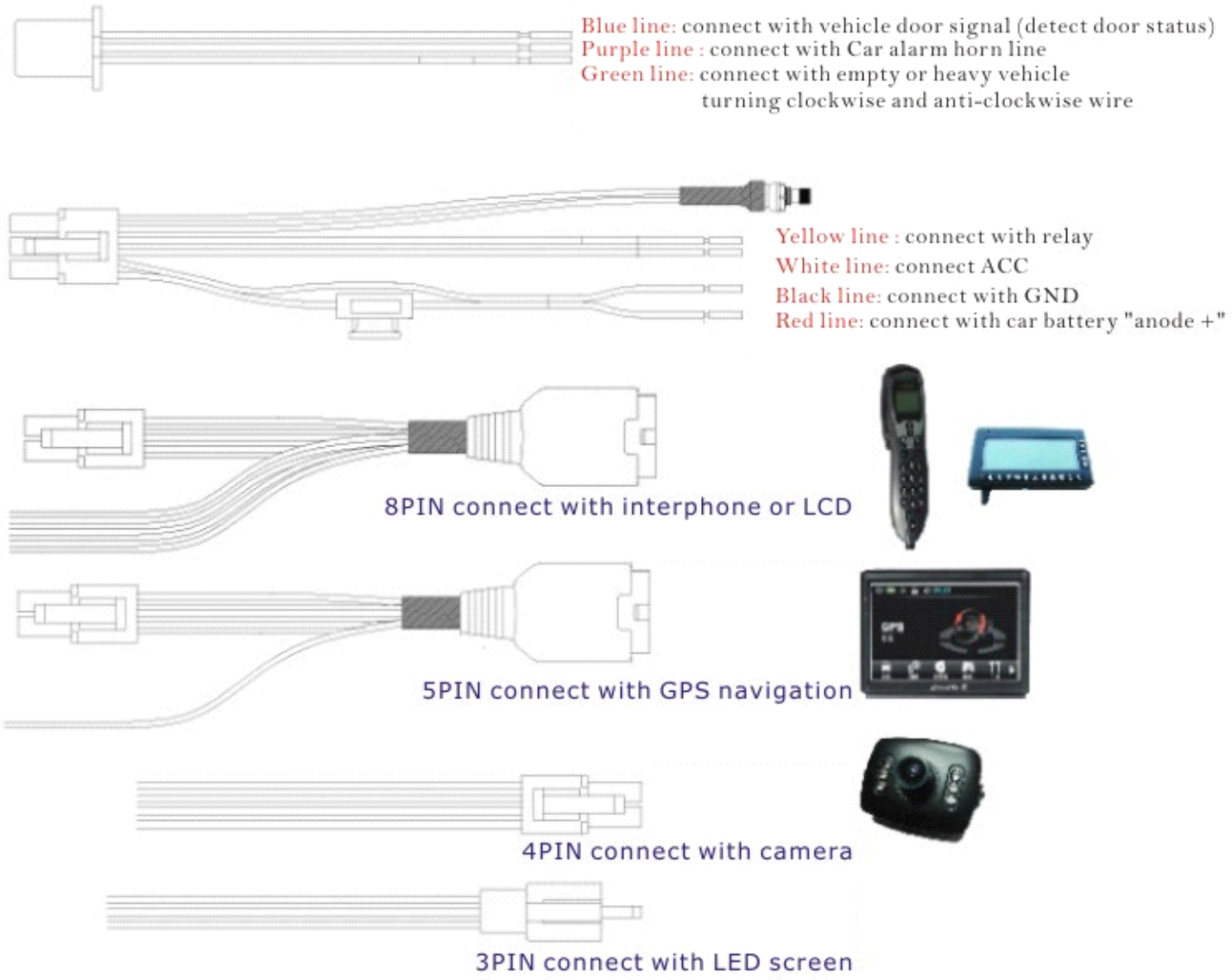
4.1 products host and accessory

1.product host 	2.GPS antenna	3.GSM antenna	4.Junction box (alarm button) 
5.relay	6.loudspeaker	7.monitoring mew	8 .camera

9.Reversing sensor	10.fuel sensor	11.LED Advertising screen	12、Scheduling screen
13.communication handset	14.Text broadcast device	15、navigation screen	16.Others: Bus-stop devices, taxi meter, temperature sensors, etc.
1-5 : the standard accessories of products，6-16 : the optional accessories.			

4.2 circuit diagram of installation

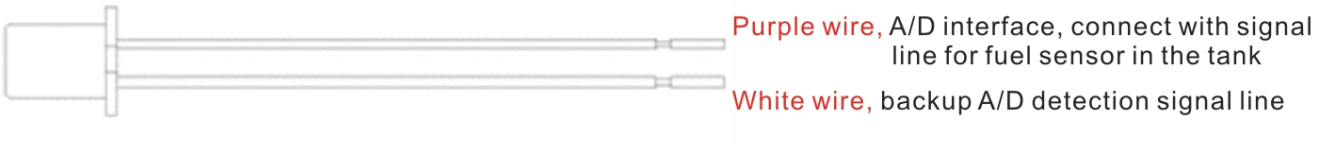
4.2.1 host and main optional accessories wiring diagram


Blue line: connect with vehicle door signal (detect door status)
Purple line : connect with Car alarm horn line
Green line: connect with empty or heavy vehicle
turning clockwise and anti-clockwise wire
Yellow line : connect with relay
White line: connect ACC
Black line: connect with GND
Red line: connect with car battery "anode +"
8PIN connect with interphone or LCD
5PIN connect with GPS navigation
4PIN connect with camera
3PIN connect with LED screen

4.2.2 Concrete car reversing sensor wiring diagram

black wire: connect turning clockwise and anti-clockwise
brown wire: connect with car battery "anode +"
blue wire: connect GND

4.2.3 Fuel sensor wiring diagram


Purple wire, A/D interface, connect with signal line for fuel sensor in the tank
White wire, backup A/D detection signal line

4.3 start up

Insert SIM card in the device , starting power until the indicator light up normally. Yellow light ofer go out indicate unprecise location ,yellow light power on flashing one time indicate power on success ,yellow flashing fast indicate is connecting and not online state, flash 1s at 5s intervels indicate GPRS normal connection , green light lasting bright 10 seconds indicate module is abnormal and is restarting .

5. Product function instructions

5.1function summarization

- L: location monitoring:including sending back at regular time ,distance sending bac , speed, statistics mileage regional monitoring etc.
- abnormal state tip: including host fault tips, emergency asking help, illegal open/close door, illegal start, the electric power lossing hint, In and out of range etc.

- Lremote set: through the center system remote set all kinds of parameters, including IP, center number, all kinds of monitoring center parameters etc.
- remote control: through the center system remote control vehicle lock car, unlock, one-way speech sounds monitored, remove terminal abnormal state etc.
- communication management: terminal can connect external LCD, handle and realize phone functions, completely hands-free calls, and can be set up various call restrictions; also can through the GPRS or CDMA with the center system to realize data communication .

- Car battery protection;the host own high and low voltage protection ,the lord had electric reverse connect protection ,save electricity status ,can ensure the car battery won't affect or damaged by the host 。
- software update : terminal can adopt local or remote wireless to finish software update。

image monitor :terminal can connect 1～4 camera to finish different kinks of image Shoot and transmission

- function expansion: terminal optional accessories realize LED advertising publishing, connect the taximeter , speech broadcast, and various types of vehicle sensor etc..。
- blind area compensation function: vehicles into the uncoverage communication signal carea, terminal will record and save running track, after recover communication signal will transfer automaticaly。

5.2 Basic function-position monitoring

5.2.1 positioning monitoring

Including timing feedback , and distance feedback, blind area compensation, speed mileage statistics, regional control, system set command , terminal feedback which include latitude, longitude, speed, the direction, the state information .

5.2.2 timing monitoring

Vehicle GPS terminal can set one time , a certain time or by a certain time interval, the position, state information will sent to the monitoring center.

5.2.3 distance minitoring

Vehicle GPS terminal move every seted distance, the car terminal will send vehicles position, state information to the monitoring center automatically.

5.3 basic function-alarm function

5.3.1 emergency alarm

Including host troubleshooting tips, emergency, the electric power lost hint, In and out of range etc. Press the hidden installation alarm button, the monitoring center will receive the vehicle alarm information, the center can monitor for the condition in the car .mainly use for vehicle anti-theft ,emergency need operation .

5.3.2 overspeed alarm

When the vehicle is beyond the monitoring center setted speed , vehicle terminal will send alarm information to the monitoring center.

5.3.3 main electric power lost alarm

Vehicles destroyed the battery power and can't supply the power , the built-in backup power can maintain a system working, and to the monitoring center will send power down alarm .

5.3.4 enter into/out boundary alarm

System support polygon area setting .once the car eneter inot the boundary or out, the car terminal will send a cross-border alarm information to the monitoring center

5.4 basic function-intelligent function

5.4.1 heartbeat

GPS car terminal can be set time heartbeat feedback time , if it doen't send other information in this period, then send a heartbeat feedback message to a monitoring center, keep terminal real-time online.

5.4.2 intelligent self-checking

The car terminal can self diagnosis, once happen faults will send a notice to center ,such as handle, GPS connection orabnormal working , and take related measures automatically . The monitoring center can also inquires the terminal current model, version, configuration, running status, function and equipmetn function and equipment models.

5.4.3 intelligent remote control

Through the center system remote control lock / unlock your car, one-way speech monitored, remove terminal abnormal state and the speed of car terminal accept instructions . Intelligence distinguish to tell whether vehicle circuit or oil implement disconnect operation, if vehicle speed lower 20 km/h, the circuit or oil will disconnect , and send a stop-oil and stop -elec confirmation sms to center Once a vehicle accept electric/oil disconnect instructions, the car terminal will memory the state until center issued restore instructions.

5.4.4 forced remote control

After the car terminal accept instructions, not judging vehicles speed per hour, execute oil disconnect it to the center a power/oil to verify that the information is. Once the car terminal accept electric/oil disconnect instructions, the car terminal will memory the state until center issued restore instructions

。

5.4.5 emergency monitor

When monitor center receive emergency alarm ,starting monitor function to monitor the condition in the car .

5.4.6 Blind area compensation

When the car enter into GSM blink area ,terminal will store the vehicle position information,after drive out blind area ,terminal will send all the information back to monitor center 。

5.4.7 Data store

Terminal with store chip can store more than 20 thousand position information (include lag/long ,speed ,direction ,mileage and so on)， and also can read again according to the center command .

5.4.8 Mileage statistics

Terminal can feedback vehicle mileage to monitor center together with vehicle position data ， the data whether feedback is controlled by the center。

5.4.9 Remote-setting

Through center system set terminal various parameters，include IP ,center number ,all kinds of monitor parameters etc。

5.4.10 Vehicle battery protection

Hosts have including high and low voltage protection, Lord electricity reverse connect protection, save electricity and so on, can ensure car battery won't affect or damaged by the host。

5.4.12 Software update

Terminal can adopt local update or remote wireless to complete software update.

5.5 Optional function –advertising publishing

Optional function generally refers to the terminal itself, but can through add some additional parts to realized the customer needed function , common optional function has: image monitoring, terminal can be external 1 ~ 4 road and camera, complete all types of image shoot and transmission; LED advertising publishing; Connect the meter taxi; Speech broadcast; All kinds of vehicle sensor, vehicle safety etc.

Users can run a taxi, passenger vehicles, engineering vehicles LED advertising publishing, through the installation of the system, the user can remote management conference, synchronous LED advertising information, the background system can to advertising client information, advertising information ,advertising schedule, the release date, release points in time management setting, the system can finish the advertising release and management, system platform development has reached domestic advanced level of the industry, by LED to obtain corresponding advertising business operating profits

。

5.6 Optional function –image monitor

The user can according to need to implement image monitoring function, the function application for passenger vehicles are more prominent, through the GPS monitoring, can realize remote management of vehicle real-time state, to know the transport condition by the image monitor for management department solve the three over phenomenons played an active and effective role, at the same time reduce the road trafic accident , and safeguards the transportation safety accident.。

5.7 Optional function - two-way navigation

Users configure the equipment can realize the front desk and the background navigation function, when the user chooses navigation screen, the vehicle can realize navigation function, hands-free calls function, text messages to be automatic speech function, MP3, MP4 function, game function etc, enormously enrich the GPS driving safety and driving entertaining.

5.8 Optional function - Concrete car positive &negative detection

Install concrete positive &negative detection through the concrete vehicles , and to know the state of the vehicle by GPS at any time, and the location and vehicle information will feedback to schedule room to improve the transportation efficiency and reduce the operation cost greatly, at the same time through the concrete vehicle information comprehensive treatment, in the background can realize: every car 's free state, working condition; In the construction site, the way, mixing station; Vehicle is are turning, reverse; Is starting state, flameout state; cement label transport to building site ,the total traffic volume, how many to transport and how much need to transport also the information analysis and achieve the purpose of intelligent management operation.

5.9 can be chosen function-communication management

terminal can connect external LCD, handle and realize phone functions, completely hands-free calls, and can be set up various call restrictions, for example answering calls restrictions ,allow some calling restrictions and so on ;also can through the GPRS or CDMA with the center system to realize wireless data communication

6.Connector instructions,

6.1 input connector

- Urgency alarm imput
- Ignite detection input
- Theft alarm input：
- one positively charged trigger switch signal input interface , connected vehicle alarm system output terminal

6.2 output connector

- stop-oil and stop-elec relay output。Note: for different voltage vehicle,should use different relay.

6.3 data connector

- RS-232 one serial data mouth
- Used for connecting with computer and update software
- Used for debug hand shank connection ,terminal testing and seeing

6.4 voice frequency connector

- monitor

7 Cautions

7.1 Make sure to read this manual carefully before using this product.

7.2 Please insert the SIM card before installing, and make sure the SIM card has no password, otherwise the tracker will not work normally.

7.3 The tracker's work voltage is 12V-24V. Please use the tracker in the scope of work voltage.

7.4 Please make sure that all the cables of the tracker has been connected rightly, and then connect the tracker to host power.

7.5 The tracker works in GPS/GSM/GPRS/CDMA wireless communications, to avoid electromagnetic interference or incompatible configuration, please stop using your tracker in the noticed place.

7.6 Keep the unit dries. Any liquid, i.e. rain, moisture, may destroy or damage the inside circuitry.

7.7 Clear the unit with a piece of dry cloth. Don't clean in chemicals or detergent.

8. Faults & The solutions

Faults	solutions
Startup Fail	Please check wire installation whether correct
Hang up Fail	If the equipment has an authorized number, unauthorized number call will not hang up. Please send the initialization command back to the factory state.
Monitor Fail	Please check whether set authorized number ok
Location report in digits of zeros.	Please check GPS antenna whether install normal and open the device out door。

digits of zeros.

9.Commands

Command	application	example	SMS
*11*1#	Inquiry center number		●
*11*4#	Inquiry terminal communication method	Online indication online；Offline indicate off line；Link indicate is connecting server IP ,port,apn hybrid and local number or terminal ID follow behind status	●
*11*5#	Checking terminal fault status	GPRS terminal reply：G:ABCDEFGH CDMA terminal reply：C:BCDEFGH A=1 indicate domain name can't be resolved B=0 indicate IP or port wrong C=1 indicate can't gain local IP D=1 indicate APN hybrid wrong ,can't	●

		connect E=1 indicate closing down charge is overdue or unopen search internet function F=2 indicate GPS faults F=1 indicate unaccurate position	
*11*7#	Inquiry alarm inform mobile phone number		●
*22*4#	Restart terminal		▲
*33*2#	Inquiry vehicle traveling total mileage		●
*33*3#	Inquiry connected image sensor channel number		●
*66*4#	Message Inquiry vehicle position		●
*77*0number#	Setting safe number	*77*0**13800138000**#	▲
*77*4number#	Setting alarm inform mobile phone numb	*77*4**15988886666**#	▲
*77*1number#	Setting local SIM NUMBER	*77*1**15988886666**#	▲
*88*1IP*port#	Setting IP address and remote port number	*88*1**111222333066***9000**# IP address：111.222.333.66 port ： 9000	▲
*88*2APN#	Setting APN hybrid	*88*2**CMNET**#	▲

Note:● indicate the unlimited support command ▲indicate the command only a super number or center number sending to terminal will be executed; If not set center number, then all number are effective.

Command	application	example	SMS
*99*0**F**#	F=1 open fuel consumption detection function F=0 close comsumption detection function		▲
*99*3aaaabbbbccccddddeeee#	• **Manual operation setting** aaaa、bbbb、cccc、dddd、eeee are empty Oil quantity ,1/4 oil quantity,2/4 oil quantity,3/4 oil mass. full oil quantity voltage AD sampling value separately, less 4 digits add 0	*0*3**0077012701780229027**7# indicate mpty oil mass,1/4 oil quantity,2/4 oil quantity,3/4 oil quantity. full oil quantity voltage AD sampling value oil are : 77、127、178、229、277 7	▲

*99*4VVVV#	Setting fuel tank capacity unit， 0.1 litre less 4 digits add 0	*99*41000# fuel tank capacity：100 litre	▲
*99*5CC#	Setting fuel consumption sampling average number short-cut process 10～90	*99*510# sampling average number：10	▲
*99*6F#	F=1 continue detecting oil consumption after ACC close		▲
*33*4#	Inquire current oil mass / fuel tank capacity /AD sampling value/average value and number	Checking result ： 75/100 77/127/178/229/275 128/125 60 A current oil quantity /fuel tank capacity： 75litre/100 litre 5 pint AD value：77、127、178、229、277 current AD sampling value/average value: 128/125 AD sampling average value number：60 A＝1 continue detecting oil consumption after ACC close；A＝0 stop detecting oil quantity after ACC close，and also keep the oil quantity value before flameout	●

Note:● indicate the unlimited support command ▲indicate the command only a super number or center number sending to terminal will be executed; If not set center number, then all number are effective.